APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/985,676	11/05/2001	Pankaj Patel	0023-0056	3995

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ART UNIT	PAPER NUMBER
2155	

DATE MAILED: 05/16/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

	Application No.	Applicant(s)
Office Action Summary	09/985,676	PATEL ET AL.
	Examiner	Art Unit	
	Shawki S. Ismail	2155	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE _3_ MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
  Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on _24 February 2006_.

2a)☐ This action is **FINAL**.   2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) _1,2 and 4-23_ is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) _1,2 and 4-23_ is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a)☐ All   b)☐ Some * c)☐ None of:

      1.☐ Certified copies of the priority documents have been received.

      2.☐ Certified copies of the priority documents have been received in Application No. _____.

      3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
    Paper No(s)/Mail Date _____.

4) ☐ Interview Summary (PTO-413)
    Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

RESPONSE TO AMENDMENT

1.   This communication is in response to the Request for Continued Examination

(RCE) amendment filed February 24, 2006.

Claims 1, 6, 9, 13, 16, 19, 22 and 23 have been amended.

Claim 3 has been cancelled.

Claims 1-2, and 4-23 are pending.

The New Grounds of Rejection

2.   Applicant's amendment and arguments received on February 24, 2006 have

been fully considered, however they are deemed to be moot in view of the new grounds

of rejection.

Claim Rejections - 35 USC § 112

3.   The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claim 1 is rejected under 35 U.S.C. 112, first paragraph, as failing to comply with

the written description requirement. The claim(s) contains subject matter, which was

not described in the specification in such a way as to reasonably convey to one skilled

in the relevant art that the inventor(s), at the time the application was filed, had

possession of the claimed invention. The claim language "...before receiving the first

information..." and "...before receiving the second information..." is not described in the

specification in such a way as to reasonably convey to one skilled in the relevant art that

the inventor(s), at the time the application was filed, had possession of the claimed invention.

4.   The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claim1-2, and 4-23 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

As to Claim 1:

It is unclear what is the relationship between the first data, first routing information, first context state information and first partial result or a first process state and what is the relationship between the second data, second routing information, second context state information and second partial result or a second process state.

"until first information is needed", it is unclear what is meant by first information, is it the first routing information or some other information. It is also unclear what is meant by needed and needed by whom.

"requesting the first information", it is unclear who is requesting the information and from requesting it from where.

"storing first context state information..." it is unclear who is doing the storing and where it is being done at.

"...a first partial result or a first process state", first partial result of what and what and a first process state of what.

"processing, by the processor, a second data before receiving the first information..." It is unclear what is meant by before receiving he first information, before receiving it where. It is also unclear what is meant by first information is it first routing information or first context state information.

As to claims 5 and 8:

It is unclear how the determination is being made and who makes the determination.

As to claim 6:

"processing for routing packets,..." processing of what

"providing state information..." where are they provided from and who are they provided to.

"store intermediate information" what does this refer to and where is it being stored.

"until first information is needed", it is unclear what is meant by first information, is it the first routing information or some other information. It is also unclear what is meant by needed and needed by whom.

"requesting the first information", it is unclear who is requesting the information and from requesting it from where.

"storing intermediate information related to the first data..." it is unclear how and in what way the intermediate information is related to the first data.

As to claim 9:

"receiving a plurality of data structures related..." where are they received from and how are they related to the packets of information.

"sending the plurality data structures..." how are they sent and by whom.

"monitoring states..." it is unclear who is doing the monitoring and how monitoring the states of the engines going to allow the engines to generate partial results.

",,,based on processing the ..." how is the processing being done.

"performing,..." it is unclear who is doing the performing and how the partial results are related to the route look-up.

"modifying..." It is unclear who is doing the modifying and how the modifying is being done.

As to claim 13:

"...receive data structures and to transmit data items..." It is unclear where the data structures are received from, how the data items are related to the data structures.

"...partially calculate a route..." it is unclear what is meant by partial result (partial result of what) and how it is used in partially calculating a route.

"...maintaining a processing state..." processing state of what and how is the processing state going to help calculate the route.

"a resource..." it is unclear as to the type of requests that the processing engines will send to the resource and how they are related to calculating the route for the data items

"a result processor..." it is unclear as to how the result processor is going to

modify (modify how) the data structures and it's relationship with the plurality of

processing engines.

These are representative examples. Applicants should review all pending claims

for similar problems. Other dependent claims, which are not specifically cited above are

also rejected because of the deviancies of its respective parent claim.

Claim Rejections - 35 USC §102

5.   The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that

form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in a patent granted on an application for patent by
another filed in the United States before the invention thereof by the applicant for patent,
or on an international application by another who has fulfilled the requirements of
paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by
the applicant for patent.

6.   Claims 1—2 and 4-23, are rejected under 35 U.S.C. 102(e) as being anticipated

by **Ferguson et al.,** (Ferguson) U.S. Patent No. **6,798,777.**

7.   As to claim 1, Ferguson teaches a method of performing route lookups for a

plurality of data, comprising:

processing, by a processor, a first data to generate first routing information until

first

information is needed (col. 2, line 64 - col. 3, line 11);

requesting the first information (col. 2, line 64 – col. 3, line 11);

storing first context state information comprising a first partial result or a first

process state for the first data (col. 4, lines 16-33);

processing, by the processor, a second data before receiving the first information

to generate second routing information until

second information is needed (col. 2, line 64 – col. 3, line 11);

requesting the second information (col. 2, line 64 – col. 3, line 11);

storing second context state information comprising a second partial result or a

second process state for the second data (col. 4, lines 16-33);; and

resuming processing, by the processor, on the first data before receiving the

second information using the stored first context state information after the requested

first information is received (col. 4, lines 16-33).

8.   As to claim 2, Ferguson teaches the method of claim 1, further comprising:

receiving the requested first information from memory.

9.   As to claim 4, Ferguson teaches the method of claim 2, further comprising:

processing, by the processor, a third data to generate routing information until

third information is needed (col. 2, line 64 – col. 3, line 11), and

processing, by the processor, a fourth data to generate routing information until

fourth information is needed (col. 2, line 64 – col. 3, line 11),

wherein at least one of said processing of a third data and said processing a

fourth data is performed before said receiving the requested first information (col. 3,

lines 9-11)

10.   As to claim 5, Ferguson teaches the method of claim 1, further comprising:

determining which data to process next when information is needed (col. 2, line 64 – col. 3, line 11),

11.   As to claim 6, Ferguson teaches a method of processing for routing packets, comprising:

providing state information to allow a processor to store intermediate information (col. 4, lines 16-33).

processing a first data related to routing of a first packet until first information is needed (col. 2, line 64 – col. 3, line 11),;

requesting the first information (col. 2, line 64 – col. 3, line 11);

storing intermediate information related to the first data (col. 17, lines 22-45); and

processing a second data related to routing of a second packet while waiting for the requested first information to arrive (col. 2, line 64 – col. 3, line 11).

12.   As to claim 7, Ferguson teaches the method of claim 6, further comprising:

processing the first data based on the stored intermediate information and the first information (col. 17, lines 22-45).

13.   As to claim 8, Ferguson teaches the method of claim 6, further comprising:

determining which of the plurality of data to process next when information is needed (col. 2, line 64 – col. 3, line 11).

14.   As to claim 9, Ferguson teaches a method for routing packets of information using corresponding data structures, comprising:

receiving a plurality of data structures related to the packets of information (col. 12, lines 50-60);

sending the data structures to a plurality of processing engines, (col. 12, lines 50-60);

monitoring states of the plurality of processing engines to allow the plurality of processing engines to generate partial results based on processing the plurality of data structures (col. 2, line 64 – col. 3, line 11);

performing, at each processing engine, concurrent route lookups for at least two of the data structures at a time using partial results for the data structures (col. 12, lines 50-60);

modifying the data structures based on the route lookups (col. 17, lines 22-45); and

routing the packets of information based on the modified data structure (col. 17, lines 22-45).

15.   As to claim 10, Ferguson teaches the method of claim 9, further comprising: forwarding the modified data structures (col. 17, lines 22-45).

16.   As to claim 11, Ferguson teaches the method of claim 9, further comprising:

conducting accounting, filtering, or policing functions on the data structures during said performing step (col. 14, lines 1-7, and col. 2, lines 40-54).

17.   As to claim 12, Ferguson teaches the method of claim 9, wherein said performing includes:

performing, at each processing; engine, concurrent route lookups for four different data structures (col. 12, lines 50-60).

18.   As to claim 13, Ferguson teaches a network device comprising:

an input portion configured to receive data structures and to transmit data items

associated with the data structures (see Fig. 2b, col. 5, line 61 – col. 6, line 13);

a plurality of processing engines, each processing engine being configured to

receive a plurality of data items from the input portion and

contemporaneously compute routes for the plurality of data items (see Fig. 9, col.

14, lines 8-27), and wherein each processing engine comprises:

a data processor configured to at least partially calculate a route for a data item

based on a partial result (col. 2, line 64 – col. 3, line 11); and

a functional control state machine configured to control operation of the data

processor by maintaining a processing state so that the data processor can calculate

the route for the data item based on information from the partially calculated route (see

Fig. 9, col. 14, lines 8-27, col. 13, lines 4-67);

a resource configured to receive requests from the plurality of processing

engines ((col. 12, lines 50-60); and

a result processor configured to modify the data structures based on the routes

computed by the plurality of processing engines (col. 17, lines 22-45).

19.   As to claim 14, Ferguson teaches the network device of claim 13, wherein each

of the plurality of processing engines includes multiple context-switched engines (col.

12, lines 50-60).

20.   As to claim 15, Ferguson teaches the network device of claim 13, wherein the

memory includes random access memory (col. 11, lines 48-63).

21.   As to claim 16, Ferguson teaches the network device of claim 13, wherein each of the plurality of processing engines includes:

        a context buffer configured to store information about a partially calculated route using the partial result from the data processor and a processing state from the functional control state machine (col. 14, lines 28-46).

22.   As to claim 17, Ferguson teaches the network device of claim 13, wherein each of the plurality of processing engines further includes:

        a context switch controller configured to cause the data processor and the functional control state machine to respectively store the partially calculated route and the processing state in the context buffer when the data processor requests data from the memory (col. 13 lines 4-67).

23.   As to claim 18, Ferguson teaches the network device of claim 13, wherein each of the plurality of processing engines further includes:

        an output buffer configured to store a fully calculated route for output to the result processor (see Fig. 3, output buffer 312).

24.   As to claim 19, Ferguson teaches a system for performing route lookups for processing a plurality of data items, comprising:

        a data processing portion configured to process one data item at a time and to pipeline data requests to a substantially eliminate idle time of the data processing portion (col. 2, line 64 – col. 3, line 11);

a control state portion to monitor operation of the data processing portion by receiving state information related to a partial result produced by the data processing portion (col. 2, line 64 – col. 3, line 11);

a buffer configured to store the partial result (col. 17, lines 13-45); and

a controller configured to load the partial result from the data processing portion into the buffer and to input another data item into the data processing portion for processing while requested data is obtained for a prior data item (col. 22, lines 13-25).

25.   As to claim 20, Ferguson teaches system of claim 19, further comprising:

an output buffer configured to store a completely processed data item from the data processing portion (col. 1, lines 56-67).

26.   As to claim 21, Ferguson teaches the system of claim 19, further comprising:

an input buffer configured to ,tore a plurality of data items to he processed by the data processing portion (col. 1, lines 56-67).

27.   As to claim 22, Ferguson teaches the system of claim 19, wherein the data processing portion includes:

a data processor configured to determine a route associated with a data item (col. 43 line 58 – col. 44, line 7), and wherein the control state portion includes:

a state machine configured to interact with the data processor and to inform the controller when the data processor will request data from the memory (col. 43 line 58 – col. 44, line 7).

28.   As to claim 23, Ferguson teaches a system, comprising:

means for processing data structures to generate routing information and for

requesting information (col. 2, line 64 – col. 3, line 11);

means for monitoring operation of the means for processing via state information associated with partial results produced by the means for processing when generating the routing information (col. 2, line 64 – col. 3, line 11);

means for storing the partial results from the means for processing while waiting for the requested information (col. 17, lines 22-46); and

means for loading the partial results into the means for storing and loading a data structure into the means for processing when the means for processing requests the information, and for loading the partial results into the means for processing after the requested information arrives (col. 17, lines 22-46).

Response to Arguments

29.   Applicant's arguments with respect to claims 1-2 and 4-23 received on February 24, 2006 have been fully considered but they are deemed to be moot in view of the new grounds of rejection.
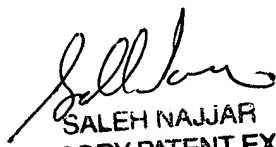
Contact Information

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Shawki S Ismail whose telephone number is 571-272-3985. The examiner can normally be reached on M-F 8:30 - 5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Saleh Najjar can be reached at 571-272-4006. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Shawki Ismail
Patent Examiner
May 8, 2006

SALEH NAJJAR
SUPERVISORY PATENT EXAMINER